GREAT NECK PUBLIC SCHOOLS

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#DiscoverGreatness

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Curriculum Profile: Algebra 1 (MS)

Department	Mathematics		
Course Name	Algebra 1 (MS)		
Course Length	One Year		
High School Credits	1 Mathematics Credit		
Description	This course culminates with the algebra one Regents exam. As such, by the end of this course, students will be able to do the following: (1) see structures in expressions and use the properties to simplify expressions and solve both equations and inequalities. (2) recognize properties of functions from words, tables, graphs, and equations. (3) Work with and recognize the usefulness of a variety of functions, including linear, quadratic, exponential, absolute value, and piecewise. (4) run a variety of univariate and bivariate statistical analyses to draw conclusions on sets of given data. This course aligns with the Next Generation New York Learning Standards.		
Target/eligible students	8th graders on the accelerated track		
State Learning Standards Link(s)	NYS Math Standards		Pgs. 108-124
Primary texts and materials	N-Gen Algebra I (Emathinstruction), Glencoe Algebra		
Scope/Sequence	*Standards/ Themes	Description (and location within the state learning standards document)	
Unit 1:Simplifying Algebraic Expressions	AI-A	Students will review the properties of mathematics. They will review operations with algebraic expressions, including factory. Students will review translating English to algebra, and will also use structure to simplify expressions with exponents.	pgs. 109-112
Unit 2: Linear Equations/Inequalities	AI-A	Students will recognize that a solution to an equation or inequality is a value or values that make the equation or inequality true. They will solve multistep equations and multistep inequalities. Finally, they will model equations and inequalities in word problems.	pgs. 113-115
Unit 3:Introduction to Functions	AI-F	Students will build on their understanding of functions from previous courses. They will use function terminology, such as domain, range, minimum, maximum, zeros, etc.	pgs. 118-122
Unit 4: Linear Functions	AI-A AI-F	Students will recognize that all linear functions have a constant rate of change. They will calculate that rate of change in a variety of methods. Once they calculate rate of change, they will be able to determine equations of linear functions. Finally, they will work with special types of functions that use linear segments, including piecewise functions, absolute value functions, and step functions.	pgs. 118, 122

Unit 5: Systems of Equations	AI-A	Students will solve systems of equations graphically, using substitution, and using elimination. They will recognize when to use each method appropriately. Finally, they will model real world situations using systems of equations.	pg. 116-118
Unit 6: Exponential Functions	Ai-A AI-F	Students will recognize that exponential functions produce outputs that are the result of repeated multiplication, and do not have a constant rate of change. They will learn how to write equations of exponential functions using the y-intercept and base. Finally, they will compare exponential growth with linear growth.	pgs.98-100
Unit 7: Polynomials	AI-A	Students will add, subtract, multiply, divide, and factor polynomial expressions.	pgs. 110-111
Unit 8: Quadratic Functions	AI-A AI-F	Students will graph quadratic functions, both with and without a calculator. They will learn a variety of ways to calculate the vertex, the y- intercept, and the zeros of a quadratic function.	pgs. 114, 115, 122
Unit 9: Roots/Irrational Numbers	AI-A	Students will recognize that an irrational number is a number which cannot be expressed as a terminating or repeating decimal. As such, they may be expressed in radical form. Students will then find solutions to quadratic equations by completing the square and using the quadratic formula.	pg. 115
Unit 10: Function Transformations	AI-F	Students will stretch and shift functions. They will learn how manipulation of parameters in functions affect the behaviors of functions.	pgs. 121-122
Unit 11: Statistics	AI-S	Students will run a variety of univariate and bivariate statistical analyses to draw conclusions on sets of given data.	pgs. 123-124
Additional Notes			